Isolation and Biochemical Identification of Bacteria of Public Health Importance From Diseased Ornamental Fish

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Background & Objectives: An aquarium is like a holiday at home in which the mysterious beauty of the underwater world will distract us from everyday's stress. Disease is universally recognized as one of the most serious threats to the successful keeping of such ecosystem. Representatives of many bacterial taxa have been associated with fish diseases. However, not all of these bacteria constitute primary pathogens.Many should be categorised as opportunistic pathogens, which colonise and cause disease in already damaged hosts. An increased number of mortalities among ornamental fish were reported from a pet shop. Thus, here, we report an outbreak of septicaemia in different fish species of an aquarium pet shop.

Methods: Diseased fish or fish at moribund were collected and transferred to the laboratory on ice. Samples from the kidney, spleen and liver were aseptically inoculated in tryptone soy broth (TSB) and incubated at 22 C for about 18 hours. The grown bacteria then were stricken on TS agar and incubated at the temperature for 48 hours. Twenty–five bacteria were isolated of which three cultures were mixed of two different colonies and required further purification. Pure cultures were identified based on biochemical tests performed in two independent laboratories.

Results: On examination, 32 fishrepresentative of different species were collected of which 28 bacteria, in total, were isolated. The isolates were identified as members of family Enterobactiraceae including genera Escherichia, Citrobacter, Enterobacter, Klebsiella and family Pseudomonadaceae, genus Pseudomonas.

Conclusion: This primary survey indicates the importance of bacterial infection as life threatening agents of ornamental fish. The economic losses together with public health impacts resulted from pet infections highlights the necessity of the detection of the agents and then to find a way to prevent and cure such infections.

Keywords: Bacteria; Public Health; Diseased Ornamental Fish